REMARKS/ARGUMENTS

Amendments to the Specification

Editorial corrections have been made in the specification by replacing the paragraph starting on p. 4, line 5, the paragraph starting on p. 4, line 28, the paragraph starting on p. 14, line 30 and the paragraph starting on p. 23, line 23. The first two corrections have been made in response to the Examiner's objection found on page 2 of the Office Action.

Amendments to Drawings

Figure 7 on sheet 6 of 7 has been amended to agree with the description. The amendment has been made in response to the Examiner's objection found on page 2 of the Office Action.

Status of Claims

Claims 1-49 remain in the application.

Objected claims 25 and 45 have been rewritten to include the limitations of claims 14 and 24 and claims 39 and 44, respectively. The Examiner has stated that claims 25 and 45 would be allowable if rewritten in independent form including all the limitations of the respective base claims and any intervening claims. Accordingly, it is believed that claims 25 and 45 are allowable.

Amendments to Claims

Claim 1 has been amended to recite the additional limitation "the network node being further adapted to be part of a distributed object framework which comprises a set of distributed objects, comprising attributes and methods". This has been added to emphasize the fact that the network node is represented by an object that includes both attributes and methods. An example of a method in the relocatable object is a receive data packet method, as found in the specification on page 13 on lines 29-31. The amendment reinforces that the network node is part of a distributed object framework that represents an object-oriented system.

Claim 2 has been amended to recite the additional limitation "comprising attributes and methods" with regard to the stationary object associated with the external host and the relocatable object associated with the mobile host.

Claims 14 and 39 have been amended to recite the additional limitation "comprising attributes and methods" with regard to the relocatable object.

Claims 24 and 44 have been amended to remove the term "-like" from the expression "multicast-like".

Claim 30 has been amended to recite the additional limitation "comprising attributes and methods" with regard to the objects which are a part of the distributed object framework.

Claims 27-29 and 47-49 have been amended to remove the term "-like" from the expression "RSVP-like".

Claim 34 has been amended to recite the additional limitation "comprising attributes and methods" with regard to the respective stationary object associated with each of a plurality of external hosts and the relocatable objects associated with each mobile host.

35 U.S.C 112 Claim Rejections

The Examiner has rejected claims 24, 27-29, 44 and 47-49 under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 27-29 and 47 to 49 the Examiner has objected to the usage of the expression "RSVP-like".

In claims 24 and 44 the Examiner has objected to the usage of the expression "multicast-like".

The claims have been amended to remove the term "-like" from the expressions "RSVP-like" and "multicast-like".

35 U.S.C 102 Claim Rejections

The Examiner has rejected claims 1-5, 9, 13 and 34-36 under 35 U.S.C. 102(e) as being

anticipated by Agrawal (U.S. Patent Publication No. 2004/0024901).

The Examiner lists terminology that is alleged to have the same functionality in Agrawal and the above-identified claim of the present application. The Examiner compares the network node of the present application to the home agent 212 of Agrawal, the radio node of the present application to the mobility agent 242 of Agrawal, the stationary object of the present application to the entries in the table in the home agent 212 to associate the home address of the mobile node 246 to the care-of-address where it is currently located as disclosed in Agrawal, the relocatable object of the present application to the entries in the table in the mobility agent 242 as disclosed in Agrawal, and the remote method invocation of the present application to the delivering and forwarding of the packets as disclosed in Agrawal.

With regard to claim 1, using these comparisons the Examiner states that Agrawal discloses "a network node adapted to forward a data packet to a mobile host connected to a radio node by performing a remote method invocation with the data packet as an argument". Claim 1 even in its original form is not disclosed by Agrawal.

In paragraph [0055] on page 5, Agrawal states "for example, the home agent 212 may include a table associating the home address of each mobile node with a global address received from the mobile node. A global care-of-address may include a care-of-address for communications with nodes throughout system 200. Based on this stored information, the globally accessible redirection agent may forward communications to the mobile node 246" (emphasis added).

This is not the same as what is recited by the present application. Agrawal does not disclose a remote method invocation, using a data packet as an argument, to achieve the transmission of the data packet to the mobile host. As described in the specification at page 10, lines 3-13 the remote method invocation is a mechanism for delivering messages from one object to another in the form of a client /server relationship. A client node may request the use of a method from a server node. An example of a method located on an object is described on page 13, lines 29-30 as a "receive IP packet" method. An object of network node (client) requests the use of the method (receive IP packet method) of an object on the radio node (server). This is clearly a different concept than is disclosed in Agrawal which simply has the home agent 212

redirecting a data packet to a mobility agent 242 based on an entry in a table that associates a care-of-address with a destination address of the mobile node and the mobility agent 242 performing a retransmission of the data packet to the mobile node 246 based on a similar set of associated addresses in a table stored in the mobility agent 242.

It is incorrect to compare the remote method invocation of the present application to the delivering and forwarding of the packets as disclosed in Agrawal. The action of a network node remotely invoking a method with the data packet as an argument, as recited in claim 1, in a client/server type relationship is a more complex action and distinguishable action from simply forwarding a data packet from one node to another as disclosed in Agrawal.

In addition, claim 1 has been amended for clarity as described above by reciting that "the network node being further adapted to be part of a distributed object framework which comprises a set of distributed objects, comprising attributes and methods". As described on page 10, at line 3, "in object oriented systems, an object is an independent software unit. Each object has some properties (or attributes) and some operations (or methods) associated with it. An object exposes its functionalities through its methods". Agrawal does not disclose or suggest objects comprising both attributes and methods as recited in amended claim 1 and therefore it is incorrect to compare an object to an entry in a table associating one address with another as suggested by the Examiner.

Furthermore, Agrawal does not teach or suggest that the networks disclosed support a distributed object framework as recited in amended claim 1. As described in the specification on page 10, line 17, "the object framework consists of a set of distributed objects (each representing a host in the network), where each object can be given a name and can also be retrieved using that name". As Agrawal does not disclose objects or an object-oriented system in the same manner as the present application, there is no reason for Agrawal to require a distributed object framework.

For at least the reasons described above it is submitted that Agrawal does not disclose all the features described in amended claim 1, and as such Agrawal cannot anticipate amended claim 1. It respectfully requested that the Examiner reconsider and withdraw the rejection of claim 1.

The Examiner states that Agrawal discloses all the features as recited in claim 2 of the

present application. In particular, it is alleged that Agrawal discloses "a stationary object associated with the external host belonging to a distributed object framework, the stationary object maintaining an association between the destination address of the mobile host and an object reference for a relocatable object associated with the mobile host" wherein the stationary object as recited in claim 2 is compared to an entry in the table of the home agent 212 and the home agent 212 uses the table entry to associate the mobile node address and the mobile node's care-of-address to forward packets to the correct mobile node 246. The relocatable object as recited in the claim is compared to an entry in the table of the mobility agent 242 that associates the mobile node address to its care-of-address. The Examiner further compares "wherein performing a remote method invocation with the data packet as an argument comprises performing a remote method invocation through the distributed object framework of a method in the relocatable object associated with the mobile host" to the home agent 212 forwarding data packets to the mobility agent 242 whereby they are subsequently forwarded to the mobile node.

Claim 2 is dependent upon claim 1 and recites additional limitation of the network node. For the same reasons described with respect to claim 1, what is being recited in claim 2 is not what is disclosed by Agrawal. Claim 2 has also been amended to recite that the stationary and relocatable objects comprise arguments and methods to more clearly differentiate over the cited reference. Agrawal does not disclose stationary or relocatable objects or the use of a remote method invocation as recited in claim 2. Therefore, since it is submitted that Agrawal does not disclose all the same features as recited in claim 2, it is impossible for Agrawal to anticipate claim 2. As such, it is respectfully requested that the Examiner reconsider and withdraw the rejection of claim 2.

The Examiner states that Agrawal discloses all the features as recited in claim 3 of the present application. In particular, the Examiner states that the home agent 212 must contain a filter since it uses a table to associate the destination address to a care-of-address to forward the packet to the mobility agent and then to the mobile node. The filter recited in claim 3 is used to identify packets having a destination address belonging to the mobile host and the send them to the stationary object associated with the external host. However, claim 3 is dependent upon claim 2, which as described above is not anticipated by Agrawal. Since Agrawal does not disclose all the features of claim 2 upon which it is dependent, Agrawal cannot anticipate claim 3. As such, it

is respectfully requested that the Examiner reconsider and withdraw the rejection of claim 3.

Claims 4 and 5 are dependent upon claim 3 and for the same reasons described above with regard to claim 3, it is respectfully requested that the Examiner reconsider and withdraw the rejection of claims 4 and 5.

Claims 9 and 13 are dependent upon claim 1 and for the same reasons described above with regard to claim 1, it is respectfully requested that the Examiner reconsider and withdraw the rejection of claims 9 and 13.

Claim 34 is a claim reciting a method directed to subject matter similar to that of claim 2. As described above, claim 2 is not anticipated by Agrawal. Therefore, for the same reasons as described above with respect to claim 2, it is submitted that Agrawal does not anticipate claim 34. It is respectfully requested that the Examiner reconsider and withdraw the rejection of claim 34.

Claims 35 and 36 are dependent upon claim 34 and for the same reasons described above with regard to claim 34, it is respectfully requested that the Examiner reconsider and withdraw the rejection to claims 35 and 36.

35 U.S.C 103 Claim Rejections

The Examiner has rejected claim 6-8, 14-23, 27, 30, 31, 33, 39-43 and 47 under 35 U.S.C. 103(a) as being unpatentable over Agrawal in view of Ahmed (U.S. Patent No. 6,747,961).

Claim 6 is dependent upon claim 1 and further recites that the network node is "a gateway node of a radio access network, the gateway node having a backbone connection to another network". The Examiner states that Agrawal fails to disclose the network node is a gateway node having a backbone connection to forward data packets directly to another network. However, the Examiner states that Ahmed discloses a mobility management scheme for a multimedia network where a network node is a gateway node and therefore it would have been obvious to modify Agrawal's apparatus to utilize a system where the home agent also has the capability to serve as a gateway, as taught by Ahmed. The Examiner alleges the motivation for such a modification is a more integrated and efficient system requiring less signaling and maintaining consistency in the

interworking functions.

For at least the reasons described above pertaining to claim 1 it is submitted that Agrawal does not teach all the features of claim 1 as alleged by the Examiner. Therefore, Agrawal cannot teach all the features of claim 6. Ahmed does not disclose or suggest the features lacking in Agrawal and relied on by the Examiner to be disclosed by Agrawal to prove that claim 1 and dependent claim 6 are obvious. As a result the Examiner has not satisfied a first criterion for establishing a prima facie case of obviousness, namely that the cited references of Agrawal and Ahmed, either alone or in combination, teach all the features of claim 6.

Furthermore, Agrawal also discloses on page 5, paragraph [0054] that "the home network 210 may include a network in which the mobile node is given a long-term IP address. The foreign network 240 may include any network other than the mobile node's home network 210" (emphasis added). If the Examiner is suggesting that the home agent is a gateway to home network 210, this would not significantly reduce the amount of signaling required for a data packet transmission as the data packet must still be routed from the corresponding node 222 to the home agent 212 to the mobility agent 242 before arriving at the mobile node 246. As the amount of signaling is not reduced, the suggested motivation of the Examiner is not achieved. If the Examiner is suggesting that the home agent 212 would be a gateway node in the foreign network 240, the mobile node 246 is no longer in a foreign network 240, but is in the home network 210. In this situation the combination of references teaches away from the intended invention as disclosed by Agrawal in which a home agent 212 is located in a first network and mobility agent 242 and mobile node 246 are located in a second network. In either case, the Examiner has not satisfied a second criterion for establishing a prima facie case of obviousness, namely there must be motivation to combine the references.

It is submitted that for at least the reasons stated above claim 6 patentably distinguishes over the cited references, either alone or in combination. It is respectfully requested that the Examiner reconsider and withdraw the 35 U.S.C. 103(a) rejection.

Claims 7 and 8 are dependent upon claim 6 and claim 1 respectively. Agrawal and Ahmed do not disclose all the features of claim 1, either alone or in combination, as described above. Therefore, the combination of Agrawal and Ahmed cannot disclose all the features of

claims 7 and 8. It is respectfully requested that the Examiner reconsider and withdraw the rejection of claims 7 and 8.

With regard to claim 14, the Examiner states that Agrawal discloses "a radio access node comprising a relocatable object associated with the mobile host belonging to a distributed object framework, the relocatable object having a remotely invokable receive data packet method" in the form of table entries in the mobility agent 242 used to update the home agent 212 and these entries are used to forward data packets to the mobile node 246. It is further alleged that "the radio access node being adapted to receive a data packet from another network node by having the receive data packet method remotely invoked with the data packet as an argument, and adapted to forward the packet to the mobile host" is disclosed by Agrawal in the form of the home agent 212 forwarding data packets to the mobility agent 242 whereby they are subsequently forwarded to the mobile node 246.

The Examiner states that Agrawal failed to disclose that the mobile host is in wireless communication with the radio access node. However, it is alleged that Ahmed does disclose such a wireless communication and it would have been obvious to modify Agrawal's apparatus to utilize a system where the radio access node is in direct wireless communication with the mobile nodes, as taught by Ahmed. The Examiner alleges the motivation to be a more integrated and efficient system requiring less signaling and maintaining consistency in the interworking functions.

The radio access node is similar to the network node recited in claims 1 and 2, with regard to the object-oriented nature of the recited relocatable object that is part of the radio access node and which is associated with the mobile host. Amended claim 14 recites the relocatable object comprises arguments and methods. An example of such a method is recited as a "receive data packet method". As described above, methods of an object-oriented nature are not disclosed by Agrawal, and as such data packets are not directed to a mobile node by invoking any type of receive data packet method in a relocatable object. In Agrawal, data packets addressed to the mobile node 246 are first received by the home agent 212 and then redirected to the mobility agent 242 by transmission initiated by the home agent 212 based on the an entry in a table associating the destination address with a care-of-address of the mobility agent 242. The data

packets are then routed to the mobile node 246 by the mobility agent 242 based on an entry in a table associating the care-of address with the local address of the mobility node 242.

For similar reasons described above pertaining to claims 1 and 2 it is submitted that Agrawal does not teach all the features of claim 14, in particular, the object-oriented nature of the relocatable object and the use of a remote method invocation. Ahmed does not disclose or suggest the features lacking in Agrawal, but relied upon by the Examiner to be disclosed by Agrawal. Therefore, the Examiner has not satisfied a first criterion for establishing a prima facie case of obviousness, namely that the cited references of Agrawal and Ahmed, either alone or in combination, teach all the features of claim 14.

Claims 15 to 23 are dependent upon claim 14 or intervening claims dependent upon claim 14 and for at least the reasons described above with regard to claim 14, it is respectfully requested that the Examiner reconsider and withdraw the rejection of claims 15 to 23.

Claim 39 is a claim reciting a method directed to subject matter similar to that of claim 14. As described above, claim 14 is not obvious with respect to the references of Agrawal and Ahmed, when either cited alone or in combination. Therefore, for the same reasons as described with respect to claim 14, it is submitted that claim 39 patentably distinguishes over the cited references. It is respectfully requested that the Examiner reconsider and withdraw the rejection of claim 39.

Claims 40 to 43 are dependent upon claim 39 and for at least the reasons described above with regard to claim 39, it is respectfully requested that the Examiner reconsider and withdraw the rejection of claims 40 to 43.

Claims 27 and 47 are dependent upon claim 23 and 39 respectively and for at least the reasons described above with regard to claims 23 and 39, it is respectfully requested that the Examiner reconsider and withdraw the rejection to claim 27 and 47. Furthermore, the Examiner is citing a section of the description, paragraph [0034], that does not state that Agrawal discloses utilizing RSVP (Resource Reservation Protocol) to make reservations, so much as it discloses how RSVP works with regard to the Mobile IP standard.

Claim 30 is a claim directed to a radio access network. The Examiner alleges that Agrawal discloses all the features recited in claim 30, except that Agrawal fails to expressly

disclose that the network node has the capabilities of a gateway node. For reasons similar to that of claim 6, the Examiner alleges that Ahmed does teach this feature and there is motivation to combine the teachings of Agrawal and Ahmed. For the same reasons as used to refute the Examiner's allegation of claim 6, it is submitted that there is insufficient motivation for combining the references. Furthermore, it is submitted that Agrawal does not disclose "a distributed object framework on which methods on objects comprising attributes and methods located on the different network nodes may be remotely invoked" as recited in claim 30. Agrawal does not make use of objects comprising attributes and methods, in particular a "receive packet method" which is also recited in claim 30.

For at least these reasons it is submitted that Agrawal does not disclose all the features recited in claim 30. Ahmed does not disclose or suggest the features lacking in Agrawal and relied on by the Examiner to be disclosed by Agrawal. Therefore, the Examiner has not satisfied a first criterion for establishing a prima facie case of obviousness, namely that the cited references of Agrawal and Ahmed, either alone or in combination, teach all the features of claim 30. Therefore, it is respectfully requested that the Examiner reconsider and withdraw the 35 U.S.C. 103(a) rejection of claim 30.

Claims 31 and 33 are dependent upon claim 30 and for at least the reasons described above with regard to claim 30, it is respectfully requested that the Examiner reconsider and withdraw the rejection of claims 31 and 33.

The Examiner has rejected claims 10, 11, 32, 37 and 38 under 35 U.S.C. 103(a) as being unpatentable over Agrawal in view of Buskens (U.S. Patent No. 6,192,250).

With regard to claims 10, 11, 32, 37 and 38, the Examiner states that Agrawal fails to disclose a network node where the distributed object framework is an object request broker, and is one of CORBA, DCOM and JAVA RMI. However, it is alleged that Buskens discloses an embodiment that describes the features of a mobile switching center utilizing CORBA and therefore, according to the Examiner it would have been obvious to modify Agrawal's apparatus to utilize CORBA. The Examiner's suggested motivation for this modification is an efficient and updated system where unnecessary processes and load is reduced.

As described above, Agrawal does not disclose a distributed object framework, let alone a

distributed object framework that is an object request broker as recited in claims 10, 32 and claim 37 or a distributed object framework that is one of CORBA, DCOM and JAVA RMI as recited in claims 11 and 38.

Claims 10 and 11 are dependent upon claim 2. Buskens does not disclose the software objects in the CORBA communications middleware as relocatable objects or a remote method invocation using a data packet as an argument as recited in claim 2.

Claim 32 is dependent upon claim 30. Buskens does not disclose the software objects in the CORBA communications middleware as relocatable objects or more specifically "a respective relocatable object, each relocatable object having a respective receive packet method which is remotely invokable through the distributed object framework" as recited in claim 30.

Claims 37 and 38 are dependent upon claim 34. Buskens does not disclose the software objects in the CORBA communications middleware as relocatable objects or more specifically "the stationary object associated with the particular external host performing a remote method invocation with the data packet as an argument through the distributed object framework of a method in the relocatable object associated with the particular mobile host" as recited in claim 34.

Buskens does not disclose or suggest the features lacking in Agrawal and relied on by the Examiner to be disclosed by Agrawal. As Agrawal does not disclose a distributed object framework as alleged by the Examiner and Buskens does not disclose the necessary features lacking in Agrawal it is submitted that the combination of Agrawal and Busken do not alone or in combination disclose all the features of claims 10, 11, 32, 37 and 38. Therefore, the Examiner has not satisfied a first criterion for establishing a prima facie case of obviousness, namely that the cited references of Agrawal and Buskens, either alone or in combination, teach all the features of claims 10, 11, 32, 37 and 38. It is respectfully requested that the Examiner reconsider and withdraw the 35 U.S.C. 103(a) rejection of claims 10, 11, 32, 37 and 38.

The Examiner has rejected claims 12, 24, 26, 44 and 46 under 35 U.S.C. 103(a) as being unpatentable over Agrawal in view of Verma (U.S. Patent No. 6,522,880).

With regard to claim 12, the Examiner has failed to provide an appropriate reason why the claim has been rejected. The reasons put forth by the Examiner recite language from claims

24, 26, 44 and 46, but nothing specific to claim 12. Regardless of this fact, claim 12 is dependent upon claim 1, and as described above Agrawal does not disclose all the features as described in claim 1. Therefore, the Examiner has failed to satisfy any of the three requirements for establishing a prima facie case of obviousness, namely that the references must teach or suggest all the features of the claim, there must be motivation for combining the references, and there must be a reasonable expectation of success. As such it is respectfully requested the Examiner withdraw the rejection of claim 12.

With regard to claims 24, 26, 44 and 46, the Examiner states that Agrawal fails to disclose "the relocatable object is adapted to behave as a proxy for the mobile host for multicast communications" as recited in claims 24 and 44 and "upon the relocatable object's relocation at a different access node, the relocatable object is adapted to leave the multicast group, and then rejoin from its new location, all transparently to the mobile host" as recited in claims 26 and 46. However, the Examiner alleges Verma discloses methods and apparatus for handoff of a connection between network devices that utilize IP multicasting doe message transmission to a group. According to the Examiner, it would have been obvious to modify Agrawal's apparatus to have the capability to support multicast operations, as taught by Verma.

Claim 24 is dependent upon claim 14 and claim 26 is dependent upon claim 24. As described above Agrawal does not disclose all the features of claim 14, either alone or in combination with Ahmed, as originally alleged by the Examiner with regard to claim 14. Claim 44 is dependent upon claim 39 and claim 46 is dependent upon claim 44 via dependence upon claim 45. As described above Agrawal does not disclose all the features of claim 39, either alone or in combination with Ahmed, as originally alleged by the Examiner with regard to claim 39.

The Examiner has not satisfied a first criterion for establishing a prima facie case of obviousness, namely that the cited references of Agrawal and Verma, either alone or in combination, teach all the features of claims 24, 26, 44 and 46. Nor has the Examiner shown that Agrawal, Ahmed and Verma teach all the features of claims 24, 26, 44 and 46 as would be necessitated due to the claim dependencies involved. Therefore, it is respectfully requested that the Examiner reconsider and withdraw the 35 U.S.C. 103(a) rejection of claims 24, 26, 44 and 46.

In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

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ANNOTATED SHEET SHOWING CHANGES

FIG. 7